

Claims

1. Transponder circuit with a resonator with a high quality factor (8) and a demodulator (7), whereby an AM-modulated signal that is transmitted by a transmitter/receiver device (2,3) and that after its demodulation has a frequency for exciting the resonator with a high quality factor (8) that corresponds to the resonance frequency of the resonator with a high quality factor (8), characterized in that
said transponder circuit additionally has a rectifier (9), an energy store (10), and a semiconductor circuit (11) that are downstream of said resonator and the input impedance of said resonator with a high quality factor (8) is matched to the load impedance of said semiconductor circuit (11) such that a supply voltage is obtained for said semiconductor circuit (11) in said energy store (10) by impedance transformation.
2. Transponder circuit in accordance with claim 1,
characterized in that
a broadband signal is used for exciting said resonator.
3. Transponder circuit in accordance with claim 1,
characterized in that
a two-tone signal is used for exciting said resonator.
4. Transponder circuit in accordance with claim 1,
characterized in that
the frequency of the excitation signal is matched to the resonance frequency of said resonator (tracking).

5. Transponder circuit in accordance with any of claims 1 through 4,
characterized in that
a quartz is used as resonator with a high quality factor.
6. Transponder circuit in accordance with any of claims 1 through 4,
characterized in that
a piezoelectric resonator is used as resonator with a high quality factor.
7. Transponder circuit in accordance with claim 6,
characterized in that
a piezoelectric resonator made of langasite is used as resonator with a high quality factor.
8. Transponder circuit in accordance with claim 6,
characterized in that
a piezoelectric resonator made of gallium orthophosphate is used as resonator with a high quality factor.
9. Transponder circuit in accordance with claim 6,
characterized in that
a piezoelectric resonator made of lithium niobate is used as resonator with a high quality factor.
10. Transponder circuit in accordance with any of claims 1 through 4,
characterized in that
an LC oscillating circuit is used as resonator with a high quality factor.
11. Transponder circuit in accordance with any of claims 1 through 4,
characterized in that
a ceramic resonator is used as resonator with a high quality factor.
12. Transponder circuit in accordance with any of claims 1 through 4,
characterized in that
a cable resonator is used as resonator with a high quality factor.

13. Transponder circuit in accordance with any of claims 1 through 4, characterized in that a dielectric resonator is used as resonator with a high quality factor.
14. Transponder circuit in accordance with any of claims 1 through 4, characterized in that acoustic resonators are used as resonators with a high quality factor.
15. Transponder circuit in accordance with any of claims 1 through 4, characterized in that an antenna is used as resonator with a high quality factor.
16. Transponder circuit in accordance with any of claims 1 through 4, characterized in that tuning-fork oscillators are used as resonators with a high quality factor.
17. Transponder circuit in accordance with any of claims 1 through 4, characterized in that mechanical oscillators are used as resonators with a high quality factor.
18. Transponder circuit in accordance with any of claims 1 through 4, characterized in that ferrimagnetic resonators are used as resonators with a high quality factor.
19. Transponder circuit in accordance with any of claims 1 through 4, characterized in that resonators working with magnetostatic waves are used as resonators with a high quality factor.
20. Transponder circuit in accordance with any of claims 1 through 19, characterized in that the stored data are used for calibrating sensors.